

homework.R

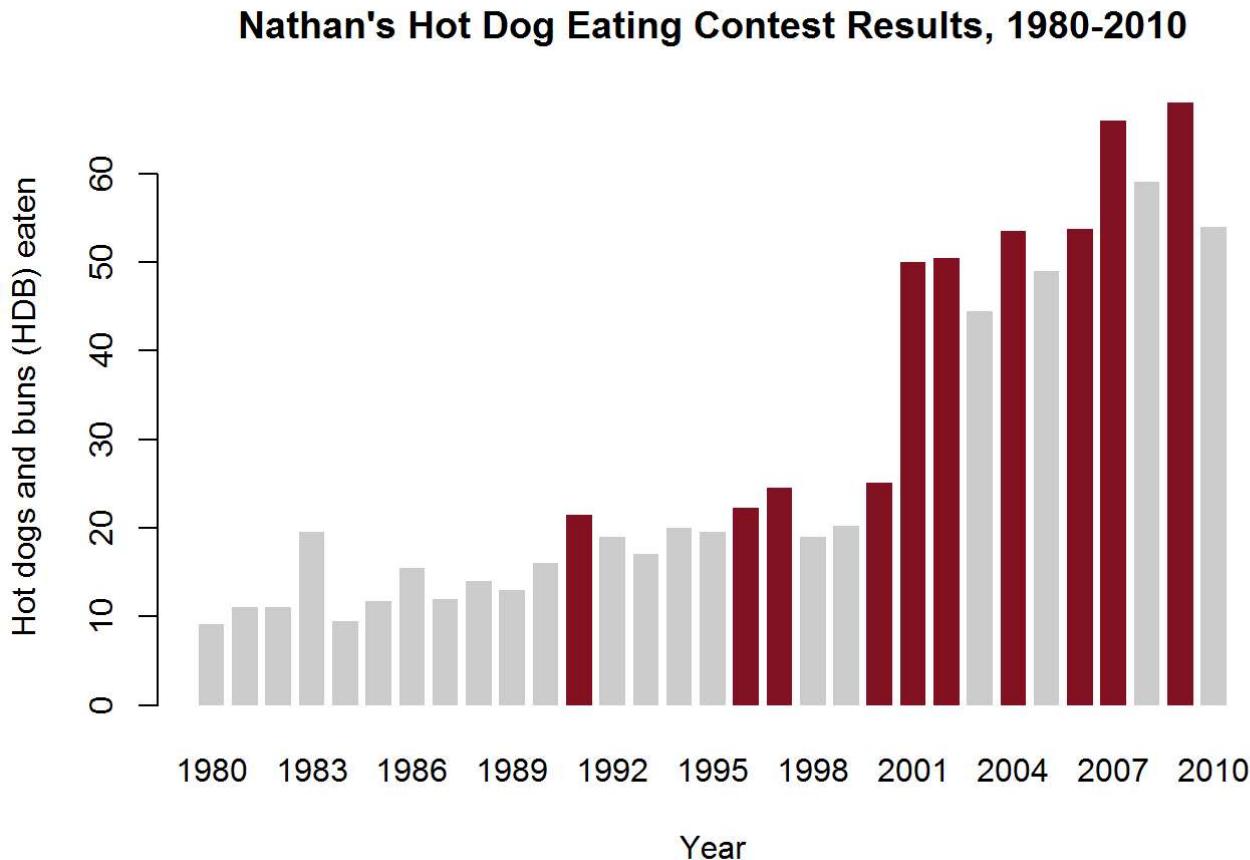
Suchitra

Mon Feb 27 15:57:04 2017

```
hotdogs = read.csv("http://datasets.flowingdata.com/hot-dog-contest-winners.csv",
                   sep=",", header=TRUE, stringsAsFactors = FALSE)

View(head(hotdogs))
fill_colors <- c()
for ( i in 1:length(hotdogs$New.record) ) {
  if (hotdogs$New.record[i] == 1) {
    fill_colors <- c(fill_colors, "#821122")
  } else {
    fill_colors <- c(fill_colors, "#cccccc")
  }
}

barplot(hotdogs$Dogs.eaten, names.arg=hotdogs$Year, col=fill_colors,
        border=NA, space=0.3, main ="Nathan's Hot Dog Eating Contest Results, 1980-2010"
        , xlab="Year", ylab="Hot dogs and buns (HDB) eaten")
```



?barplot

```
## starting httpd help server ...
```

```
## done
```

```
#####
#http://datasets.flowingdata.com/hot-dog-places.csv

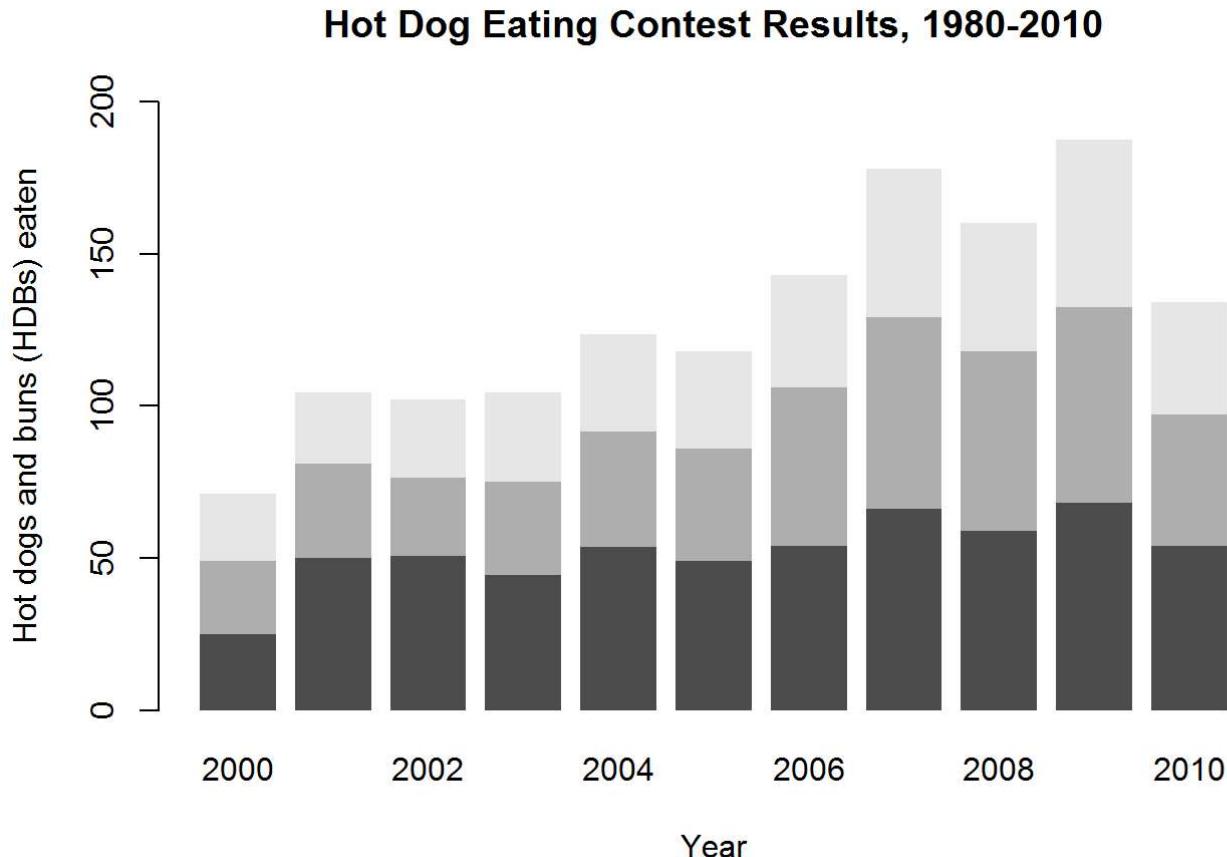
hot_dog_places = read.csv("http://datasets.flowingdata.com/hot-dog-places.csv",
                          sep=",", header=TRUE, stringsAsFactors = FALSE)

names(hot_dog_places) <-
  c("2000", "2001", "2002", "2003", "2004",
  "2005", "2006", "2007", "2008", "2009", "2010")

View(head(hot_dog_places))

hot_dog_matrix <- as.matrix(hot_dog_places)

barplot(hot_dog_matrix, border=NA, space=0.25, ylim=c(0, 200),
        xlab="Year", ylab="Hot dogs and buns (HDBs) eaten",
        main="Hot Dog Eating Contest Results, 1980-2010")
```

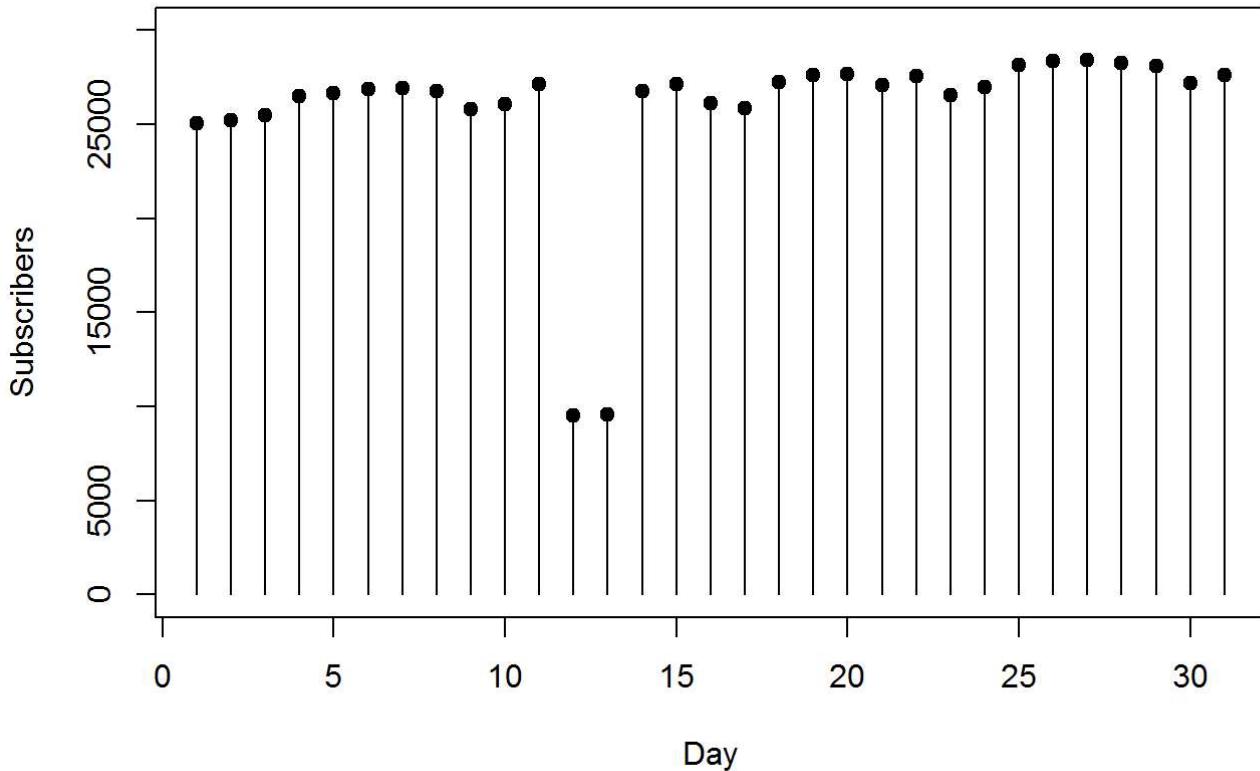


```
#####
##https://github.com/swinton/Visualize-This/blob/master/ch04/data/flowingdata_subscribers.csv

subscribers <-
  read.csv("flowingdata_subscribers.csv",
           sep=",", header=TRUE)

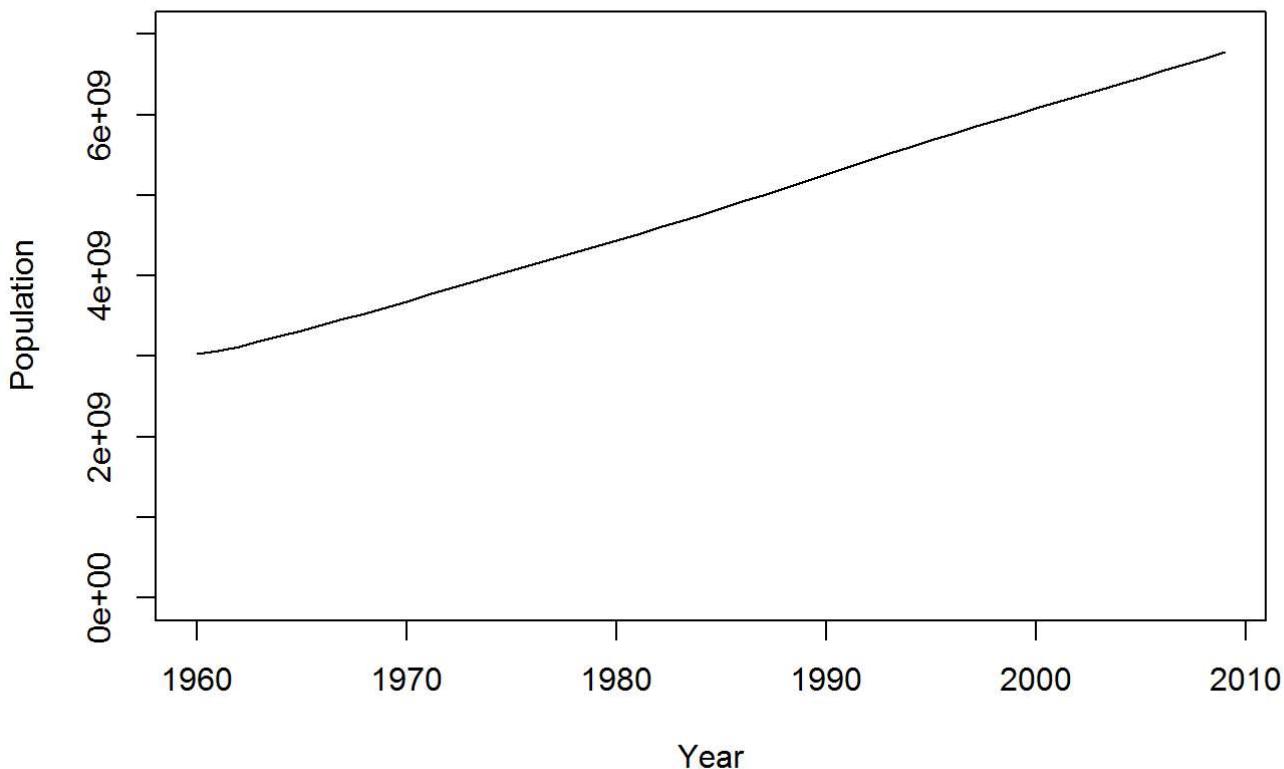
View(subscribers)

plot(subscribers$Subscribers, type="h", ylim=c(0, 30000),
     xlab="Day", ylab="Subscribers")
points(subscribers$Subscribers, pch=19, col="black")
```



```
#####

population <-
  read.csv("worldpopulation.csv",
           sep=",", header=TRUE)
plot(population$Year, population$Population, type="l",
     ylim=c(0, 7000000000), xlab="Year", ylab="Population")
```

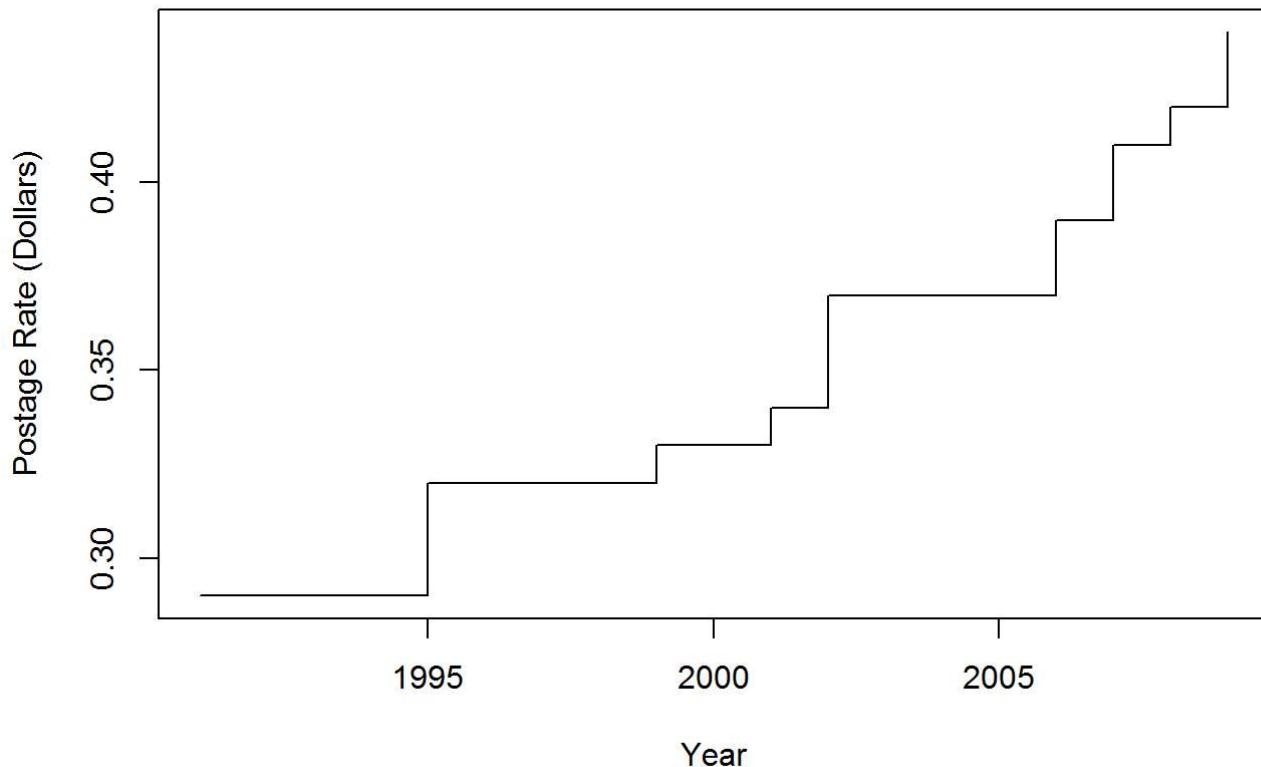


```
#####
#http://datasets.flowingdata.com/us-postage.csv

postage <- read.csv("http://datasets.flowingdata.com/us-postage.csv",
                     sep=",", header=TRUE)

postage = head(postage,9)
plot(postage$Year, postage$Price, type="s",
     main="US Postage Rates for Letters, First Ounce, 1991-2009",
     xlab="Year", ylab="Postage Rate (Dollars)")
```

US Postage Rates for Letters, First Ounce, 1991-2009



```
#####part2
```

```
par(mfrow=c(2,2))
art = read.csv("art.csv",header = TRUE, stringsAsFactors = FALSE)
str(art)
```

```
## 'data.frame': 10000 obs. of 9 variables:
## $ date      : chr "2012-01-03" "2012-01-03" "2012-01-03" "2012-01-04" ...
## $ year      : int 2012 2012 2012 2012 2012 2012 2012 2012 2012 ...
## $ rep       : chr "Qiaoli" "Qiaoli" "Barakat" "Thomas" ...
## $ store     : chr "Portland" "Portland" "Portland" "Davenport" ...
## $ paper     : chr "watercolor" "drawing" "drawing" "watercolor" ...
## $ paper.type: chr "pad" "roll" "pads" "pad" ...
## $ unit.price: num 12.2 21 10.3 12.2 10.3 ...
## $ units.sold: int 1 1 1 2 1 1 16 2 1 1 ...
## $ total.sale: num 12.2 21 10.3 24.3 10.3 ...
```

```
View(art)
```

```
hist(art$total.sale,main ="Distribution of Total Art Sale", col= "brown")
```

```
barplot(table(art$year),art$total.sale)
#plot(table(art$total.sale))
```

```
d= density(art$total.sale)
plot(d, main = "Distribution of Total Art Sale")
polygon(d,col ="blue")
```

```
rownames(art)
```

```

## [1] "744"   "3487"  "9798"  "829"   "842"   "1231"  "1371"  "1509"
## [9] "2168"  "2988"  "6885"  "7381"  "9095"  "681"   "3970"  "9799"
## [17] "3063"  "4479"  "355"   "1214"  "1530"  "2417"  "5658"  "6423"
## [25] "9398"  "9679"  "9957"  "192"   "764"   "1899"  "2413"  "2822"
## [33] "3118"  "5620"  "7958"  "8728"  "9310"  "9505"  "2467"  "2845"
## [41] "3210"  "4676"  "7843"  "9109"  "2013"  "2297"  "2833"  "9101"
## [49] "9478"  "9930"  "21"    "2229"  "6083"  "7996"  "8416"  "4060"
## [57] "4346"  "5009"  "8480"  "346"   "487"   "2166"  "2607"  "2827"
## [65] "4633"  "5040"  "5467"  "5722"  "7949"  "9796"  "319"   "3924"
## [73] "5936"  "8372"  "8771"  "541"   "2191"  "2997"  "5719"  "8605"
## [81] "8914"  "3495"  "5881"  "6983"  "9776"  "154"   "1762"  "2397"
## [89] "7016"  "3090"  "3103"  "4540"  "4670"  "5136"  "6335"  "9232"
## [97] "6931"  "7140"  "4053"  "4522"  "7148"  "9130"  "9474"  "274"
## [105] "2831"  "3591"  "3454"  "907"   "4486"  "4590"  "6123"  "7147"
## [113] "549"   "1834"  "2154"  "6442"  "6919"  "2806"  "4326"  "4719"
## [121] "7713"  "1199"  "1357"  "1965"  "3378"  "5802"  "6241"  "6734"
## [129] "8398"  "453"   "1605"  "4256"  "5380"  "5538"  "8039"  "8484"
## [137] "9680"  "9910"  "1924"  "3099"  "5019"  "966"   "9482"  "256"
## [145] "8041"  "3656"  "5656"  "1597"  "9223"  "740"   "2529"  "2913"
## [153] "3518"  "4440"  "8202"  "8694"  "9522"  "9750"  "644"   "1122"
## [161] "2781"  "2872"  "3108"  "4987"  "6405"  "7511"  "8888"  "9002"
## [169] "2986"  "3880"  "9506"  "288"   "3484"  "7884"  "8154"  "8400"
## [177] "9274"  "9337"  "477"   "2651"  "3353"  "5455"  "5689"  "8022"
## [185] "8555"  "9185"  "383"   "2354"  "3388"  "5889"  "6585"  "7294"
## [193] "8342"  "404"   "2027"  "2575"  "3489"  "3667"  "4556"  "4721"
## [201] "4730"  "5683"  "9253"  "9306"  "579"   "664"   "1690"  "1970"
## [209] "4740"  "5298"  "6749"  "1747"  "8426"  "8513"  "9443"  "1652"
## [217] "2000"  "2665"  "4667"  "4858"  "6691"  "7050"  "8420"  "455"
## [225] "466"   "7551"  "1453"  "2259"  "4942"  "6644"  "7900"  "879"
## [233] "1353"  "1479"  "8218"  "4433"  "4589"  "4870"  "6374"  "7861"
## [241] "9283"  "2764"  "2955"  "3045"  "6959"  "7313"  "8301"  "8828"
## [249] "9529"  "285"   "312"   "1860"  "2788"  "7731"  "7818"  "9402"
## [257] "7441"  "7775"  "8812"  "646"   "3716"  "4196"  "4874"  "5648"
## [265] "7204"  "7926"  "9001"  "9652"  "1608"  "4746"  "6760"  "6921"
## [273] "8015"  "8046"  "9867"  "181"   "1217"  "2048"  "191"   "266"
## [281] "1620"  "1693"  "2896"  "3202"  "3588"  "3856"  "3969"  "4224"
## [289] "4357"  "5086"  "5868"  "7291"  "7670"  "8215"  "8295"  "9236"
## [297] "9481"  "596"   "2044"  "4154"  "4350"  "4680"  "4793"  "5223"
## [305] "5478"  "6463"  "7842"  "8045"  "8197"  "8871"  "9193"  "3864"
## [313] "7403"  "7871"  "9039"  "521"   "4016"  "4864"  "5413"  "5829"
## [321] "2948"  "5248"  "5641"  "7472"  "833"   "3568"  "8845"  "9753"
## [329] "799"   "900"   "1268"  "1801"  "2472"  "2520"  "2618"  "3799"
## [337] "7538"  "8785"  "8809"  "86"    "899"   "982"   "1165"  "4849"
## [345] "5241"  "6173"  "6567"  "6579"  "7181"  "8560"  "2920"  "6203"
## [353] "6296"  "7002"  "921"   "1232"  "8800"  "9901"  "555"   "2844"
## [361] "6825"  "7897"  "9883"  "9921"  "361"   "647"   "4317"  "7675"
## [369] "8590"  "4563"  "6843"  "8608"  "9875"  "166"   "357"   "430"
## [377] "909"   "1144"  "2245"  "3284"  "4128"  "5550"  "1465"  "2644"
## [385] "5250"  "5273"  "5482"  "5518"  "5653"  "8259"  "8650"  "9788"
## [393] "526"   "6840"  "7370"  "9174"  "665"   "1483"  "4559"  "4584"
## [401] "6024"  "8379"  "8533"  "8577"  "8758"  "9256"  "82"    "594"
## [409] "1640"  "2541"  "3838"  "4406"  "6733"  "1746"  "3903"  "6429"
## [417] "7844"  "1688"  "4605"  "451"   "728"   "1507"  "2085"  "3681"

```

```
## [425] "4622" "5330" "6768" "6781" "7801" "9023" "9340" "9356"
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## [441] "8900" "9064" "9527" "131" "750" "1849" "3813" "3935"
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## [457] "559" "1867" "2268" "2482" "2895" "5742" "5997" "8902"
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## [481] "2614" "2936" "3621" "4216" "4601" "4614" "4624" "4839"
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## [593] "4885" "6212" "8886" "9019" "9759" "1115" "3028" "4953"
## [601] "7665" "8356" "8911" "9931" "1126" "2153" "6285" "9081"
## [609] "4703" "5174" "9403" "9846" "42" "254" "3208" "4728"
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## [721] "2182" "5582" "1714" "2481" "2810" "3503" "4971" "5044"
## [729] "5195" "7012" "7725" "8310" "4035" "4266" "8690" "2672"
## [737] "3359" "6297" "9520" "3635" "5332" "5998" "6767" "6807"
## [745] "7115" "9261" "1882" "2828" "3073" "3177" "3587" "4662"
## [753] "5786" "6448" "9291" "9694" "151" "8988" "36" "653"
## [761] "672" "3132" "7515" "7853" "8748" "6347" "1414" "1452"
## [769] "5884" "5888" "6258" "6553" "7425" "7544" "8101" "8961"
## [777] "317" "1174" "2974" "5154" "5528" "6279" "726" "1416"
## [785] "1972" "2493" "2583" "2798" "2842" "3546" "3602" "4403"
## [793] "4975" "5623" "6354" "6438" "6583" "7047" "7866" "8939"
## [801] "9577" "85" "378" "923" "1201" "1612" "1772" "1850"
## [809] "2579" "3078" "3787" "5258" "6101" "6310" "6315" "6584"
## [817] "7598" "7780" "8954" "3402" "6627" "7167" "7759" "8076"
## [825] "8726" "99" "5383" "5554" "6890" "8441" "9496" "3264"
## [833] "4049" "7004" "8714" "9845" "1208" "1689" "2851" "3193"
## [841] "4126" "5017" "5090" "5381" "6863" "6868" "7038" "7225"
## [849] "7387" "7727" "112" "2195" "2382" "3022" "4397" "4661"
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## [857] "8036" "9012" "5235" "5545" "8089" "8623" "1014" "6744"
## [865] "197" "278" "1734" "4289" "4303" "5200" "7752" "9262"
## [873] "1641" "5973" "415" "797" "4262" "5733" "6976" "7130"
## [881] "8093" "8600" "2146" "2275" "2664" "3230" "3915" "5116"
## [889] "7079" "7838" "8251" "557" "2255" "3100" "5059" "5321"
## [897] "8425" "9139" "1764" "439" "1001" "1977" "5027" "5612"
## [905] "7206" "2399" "3472" "3533" "5496" "5596" "5969" "8663"
## [913] "9933" "80" "1769" "2667" "5299" "9013" "715" "853"
## [921] "1237" "2141" "4177" "4349" "5213" "5946" "7289" "7444"
## [929] "9716" "1046" "3068" "5537" "5810" "7754" "9199" "1304"
## [937] "2975" "3441" "4727" "5799" "4626" "7931" "8365" "9211"
## [945] "1744" "2587" "3508" "8214" "81" "486" "689" "898"
## [953] "5175" "5348" "7096" "9244" "9279" "1707" "2247" "2555"
## [961] "2907" "3330" "6046" "7622" "9225" "9886" "3054" "379"
## [969] "388" "3115" "3705" "4636" "4960" "6450" "8991" "9188"
## [977] "723" "3322" "4842" "6634" "6751" "7522" "633" "1309"
## [985] "2355" "3225" "4914" "7151" "7478" "8904" "9058" "2504"
## [993] "3185" "3293" "3861" "4756" "7566" "7939" "180" "4887"
## [1001] "5507" "7045" "7094" "8052" "732" "809" "2230" "4511"
## [1009] "5339" "7089" "7938" "9051" "9955" "1657" "3907" "5416"
## [1017] "6930" "7773" "8518" "9114" "1905" "5638" "9898" "1500"
## [1025] "3531" "6613" "8444" "8743" "238" "524" "1093" "1621"
## [1033] "1703" "2372" "4047" "5053" "6221" "7716" "2639" "2949"
## [1041] "3904" "5037" "5249" "5954" "6022" "7642" "8033" "8523"
## [1049] "9076" "3053" "5142" "1112" "2715" "3266" "3320" "5827"
## [1057] "6362" "6977" "1054" "1361" "4318" "4518" "8581" "871"
## [1065] "2494" "6475" "8721" "9175" "9770" "9810" "32" "485"
## [1073] "930" "1020" "1350" "2523" "2731" "3520" "4884" "5038"
## [1081] "5597" "5791" "7715" "7756" "8233" "8522" "9833" "429"
## [1089] "4959" "5045" "5812" "6202" "8646" "233" "1815" "3977"
## [1097] "8760" "9025" "1664" "7413" "7653" "9131" "261" "3538"
## [1105] "4085" "6116" "7449" "8915" "627" "1991" "4288" "6148"
## [1113] "7203" "182" "1248" "1420" "3740" "3773" "3869" "4281"
## [1121] "5468" "5713" "6238" "6592" "7302" "9757" "216" "957"
## [1129] "1295" "1305" "1316" "1679" "3305" "6154" "8550" "8675"
## [1137] "8713" "9213" "993" "1025" "4799" "5608" "6276" "6785"
## [1145] "7180" "8539" "22" "1668" "3109" "3463" "3677" "3768"
## [1153] "4879" "4906" "9963" "1565" "1750" "2917" "754" "1791"
## [1161] "5057" "6417" "6896" "666" "3575" "3939" "5627" "5697"
## [1169] "7714" "9563" "1176" "2243" "2559" "3050" "4241" "5800"
## [1177] "6517" "6679" "8846" "9721" "2571" "3430" "3500" "4290"
## [1185] "7430" "44" "2794" "679" "3895" "9259" "350" "1229"
## [1193] "3016" "7541" "4872" "6183" "9792" "259" "2203" "3198"
## [1201] "3625" "3727" "4570" "5412" "5613" "6630" "7588" "7792"
## [1209] "8628" "9249" "9655" "9736" "9940" "5774" "6168" "7620"
## [1217] "9065" "9144" "3179" "3912" "9326" "9760" "7320" "2838"
## [1225] "5906" "7463" "7615" "2902" "8009" "695" "3021" "8710"
## [1233] "338" "919" "1253" "1708" "2959" "3342" "3416" "4253"
## [1241] "4775" "6236" "8609" "9850" "1674" "2708" "3539" "3708"
## [1249] "3739" "4068" "6745" "7053" "7516" "7691" "7702" "8889"
## [1257] "9060" "9106" "9517" "9829" "9970" "4454" "4659" "5701"
## [1265] "7826" "3392" "5220" "9688" "9700" "117" "1663" "3144"
## [1273] "5402" "142" "1181" "7699" "2938" "3252" "5093" "5368"
## [1281] "5504" "6834" "9325" "1737" "1759" "3247" "7072" "9497"
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## [8785] "3120"  "3327"  "3391"  "5228"  "6021"  "6523"  "7057"  "9615"
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## [9569] "2584"   "3629"   "4104"   "6869"   "7988"   "9104"   "3221"   "4337"
## [9577] "4833"   "6428"   "67"     "263"    "707"    "2462"   "2586"   "2995"
## [9585] "4364"   "4938"   "6321"   "7129"   "7429"   "7643"   "8982"   "9540"
## [9593] "9873"   "1489"   "2433"   "2596"   "3527"   "3649"   "4921"   "5382"
## [9601] "5717"   "6304"   "6547"   "6638"   "6910"   "7586"   "9375"   "9950"
## [9609] "3608"   "6166"   "8238"   "8452"   "2393"   "2622"   "3843"   "5190"
## [9617] "7048"   "9055"   "1119"   "1671"   "3249"   "6501"   "6617"   "8017"
## [9625] "9186"   "617"    "1257"   "2121"   "2252"   "5211"   "6542"   "7502"
## [9633] "9557"   "9882"   "106"    "1556"   "4883"   "6914"   "501"    "540"
## [9641] "1627"   "2898"   "4383"   "4631"   "5693"   "6619"   "7649"   "8319"
## [9649] "8412"   "8561"   "974"    "2409"   "2425"   "2601"   "3096"   "5431"
## [9657] "5585"   "5978"   "8821"   "9155"   "693"    "2627"   "3344"   "3666"
## [9665] "3872"   "5080"   "6497"   "7008"   "7283"   "7373"   "1648"   "2258"
## [9673] "4115"   "4444"   "8890"   "9399"   "9545"   "137"    "990"    "2232"
## [9681] "2906"   "3138"   "6770"   "939"    "1675"   "1742"   "2124"   "2777"
## [9689] "3370"   "8256"   "8261"   "8308"   "2878"   "4845"   "8196"   "2096"
## [9697] "4408"   "4889"   "5595"   "6082"   "7272"   "714"    "1051"   "1789"
## [9705] "3615"   "6284"   "6610"   "7821"   "9428"   "9858"   "1884"   "3685"
## [9713] "7597"   "8461"   "9074"   "9077"   "9307"   "9368"   "1581"   "4772"
## [9721] "5558"   "6672"   "7609"   "9670"   "807"    "1114"   "3279"   "3759"
## [9729] "3999"   "5152"   "6573"   "6826"   "3992"   "4637"   "4851"   "5804"
## [9737] "6580"   "6631"   "6878"   "7186"   "7189"   "9613"   "126"    "1402"
## [9745] "2107"   "8953"   "1941"   "2407"   "2780"   "2996"   "3137"   "3844"
## [9753] "3958"   "4390"   "5450"   "5953"   "5966"   "6257"   "7423"   "8524"
## [9761] "8715"   "9206"   "9989"   "61"     "96"    "1063"   "1480"   "1818"
## [9769] "2517"   "2662"   "3216"   "3549"   "4990"   "5256"   "5267"   "5633"
## [9777] "7258"   "8240"   "9105"   "670"    "2877"   "3932"   "3981"   "4359"
## [9785] "4726"   "4782"   "6117"   "6254"   "7613"   "267"    "326"    "4698"
## [9793] "5172"   "5515"   "1311"   "3540"   "7465"   "239"    "303"    "1845"
## [9801] "5917"   "8709"   "9208"   "9346"   "10"     "512"    "6511"   "7527"
## [9809] "8206"   "9430"   "1183"   "2348"   "2391"   "2821"   "4027"   "4423"
## [9817] "4645"   "5629"   "6215"   "7190"   "7621"   "7989"   "8554"   "9681"
## [9825] "9749"   "9868"   "295"    "469"    "1796"   "2554"   "3263"   "3796"
## [9833] "5289"   "6207"   "6264"   "9265"   "1008"   "4105"   "9659"   "129"
## [9841] "8869"   "747"    "1593"   "1683"   "1987"   "2707"   "6159"   "6459"
## [9849] "9210"   "6146"   "6231"   "8315"   "9808"   "492"    "910"    "926"
## [9857] "5379"   "5397"   "1499"   "1887"   "2075"   "3752"   "5186"   "5373"
## [9865] "5900"   "6917"   "7082"   "7199"   "643"    "1085"   "1680"   "2914"
## [9873] "4157"   "4158"   "4862"   "4934"   "5893"   "7679"   "8085"   "8333"
## [9881] "8487"   "2281"   "4843"   "4982"   "247"    "581"    "2270"   "2563"
## [9889] "2621"   "1673"   "4587"   "5916"   "6458"   "7126"   "7776"   "8597"
## [9897] "1681"   "5968"   "6493"   "1370"   "4834"   "5602"   "6177"   "8497"
## [9905] "8704"   "230"    "1116"   "2876"   "3409"   "3990"   "4006"   "4150"
## [9913] "4504"   "4778"   "5131"   "5144"   "5168"   "7395"   "8228"   "9795"
## [9921] "2771"   "4527"   "4917"   "6330"   "6595"   "7839"   "7952"   "9959"
```

```
## [9929] "1417"  "2745"  "3804"  "773"   "1732"  "2202"  "3579"  "8080"
## [9937] "597"    "3433"  "4019"  "5634"  "9100"  "4026"  "5564"  "6369"
## [9945] "7774"  "8034"  "8245"  "1639"  "4246"  "6548"  "7915"  "9129"
## [9953] "857"   "2808"  "3788"  "3987"  "5062"  "5963"  "6698"  "7845"
## [9961] "8569"  "8909"  "967"   "1263"  "2120"  "4597"  "5940"  "6479"
## [9969] "7497"  "7892"  "8607"  "9715"  "2189"  "3982"  "4620"  "5326"
## [9977] "6808"  "2227"  "2558"  "4547"  "5650"  "6629"  "8187"  "8811"
## [9985] "848"   "1091"  "1226"  "3562"  "3815"  "4116"  "6192"  "7101"
## [9993] "7480"  "7936"  "395"   "2213"  "3689"  "6775"  "7455"  "8204"
```

```
colnames(art)
```

```
## [1] "date"      "year"       "rep"        "store"      "paper"
## [6] "paper.type" "unit.price" "units.sold" "total.sale"
```

```
head(art)
```

```
##           date year rep store paper paper.type unit.price
## 744 2012-01-03 2012 Qiaoli Portland watercolor      pad    12.15
## 3487 2012-01-03 2012 Qiaoli Portland drawing        roll   20.99
## 9798 2012-01-03 2012 Barakat Portland drawing       pads   10.26
## 829  2012-01-04 2012 Thomas Davenport watercolor      pad    12.15
## 842  2012-01-04 2012 Arinjay Portland drawing       pads   10.26
## 1231 2012-01-04 2012 Patrick Syracuse drawing journal  24.94
##           units.sold total.sale
## 744          1     12.15
## 3487         1     20.99
## 9798         1     10.26
## 829          2     24.30
## 842          1     10.26
## 1231         1     24.94
```

```
watercolor = subset(art, paper== "watercolor")
head(watercolor)
```

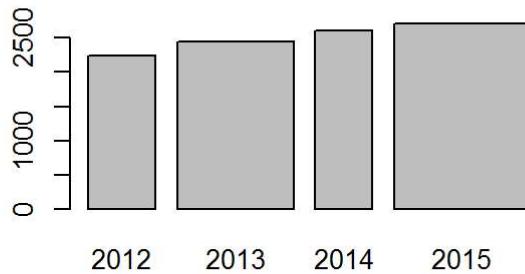
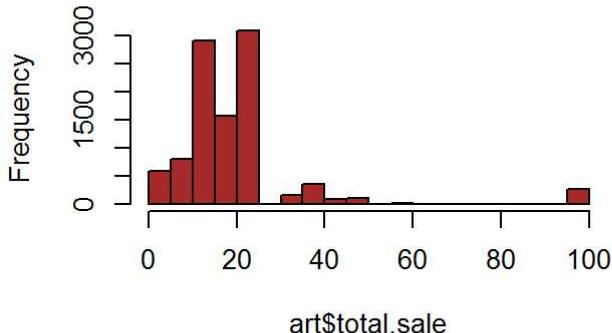
```
##           date year rep store paper paper.type unit.price
## 744 2012-01-03 2012 Qiaoli Portland watercolor      pad    12.15
## 829 2012-01-04 2012 Thomas Davenport watercolor      pad    12.15
## 2988 2012-01-04 2012 Yunzhu Syracuse watercolor      pad    12.15
## 6885 2012-01-04 2012 Mohit Davenport watercolor      pad    12.15
## 9095 2012-01-04 2012 Arinjay Portland watercolor block   19.34
## 9799 2012-01-05 2012 Patrick Syracuse watercolor      pad    12.15
##           units.sold total.sale
## 744          1     12.15
## 829          2     24.30
## 2988         1     12.15
## 6885         4     48.60
## 9095         1     19.34
## 9799         1     12.15
```

```
drawing_paper = subset(art, paper == "drawing")
head(drawing_paper)
```

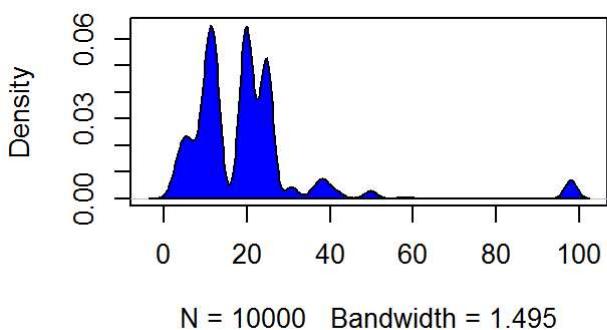
```
##          date year   rep     store paper paper.type unit.price
## 3487 2012-01-03 2012 Qiaoli  Portland drawing      roll    20.99
## 9798 2012-01-03 2012 Barakat  Portland drawing     pads    10.26
## 842  2012-01-04 2012 Arinjay Portland drawing     pads    10.26
## 1231 2012-01-04 2012 Patrick Syracuse drawing journal  24.94
## 1371 2012-01-04 2012 Aman   Portland drawing sheet    0.36
## 1509 2012-01-04 2012 Mohit  Davenport drawing pads    10.26
##          units.sold total.sale
## 3487           1      20.99
## 9798           1      10.26
## 842            1      10.26
## 1231           1      24.94
## 1371          16      5.76
## 1509           2      20.52
```

```
plot(table(art$total.sale), type="l",
     main = "Distribution of Total Art paper Sale",
     xlab = "Total art paper sale", col = "seagreen2", ylab = " Frequency")
```

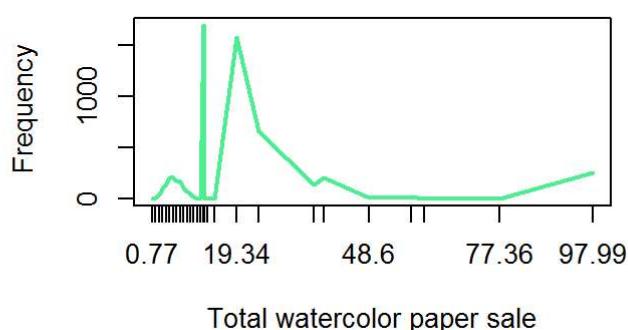
Distribution of Total Art Sale



Distribution of Total Art Sale



Distribution of Total Watercolor paper Sale



```
plot(table(drawing_paper$total.sale), type="l",
  main = "Distribution of Total Drawing paper Sale",
  xlab = "Total drawing paper sale", col = "skyblue",ylab =" Frequency")

colors()
```



```
## [160] "gray7"          "gray8"          "gray9"
## [163] "gray10"         "gray11"         "gray12"
## [166] "gray13"         "gray14"         "gray15"
## [169] "gray16"         "gray17"         "gray18"
## [172] "gray19"         "gray20"         "gray21"
## [175] "gray22"         "gray23"         "gray24"
## [178] "gray25"         "gray26"         "gray27"
## [181] "gray28"         "gray29"         "gray30"
## [184] "gray31"         "gray32"         "gray33"
## [187] "gray34"         "gray35"         "gray36"
## [190] "gray37"         "gray38"         "gray39"
## [193] "gray40"         "gray41"         "gray42"
## [196] "gray43"         "gray44"         "gray45"
## [199] "gray46"         "gray47"         "gray48"
## [202] "gray49"         "gray50"         "gray51"
## [205] "gray52"         "gray53"         "gray54"
## [208] "gray55"         "gray56"         "gray57"
## [211] "gray58"         "gray59"         "gray60"
## [214] "gray61"         "gray62"         "gray63"
## [217] "gray64"         "gray65"         "gray66"
## [220] "gray67"         "gray68"         "gray69"
## [223] "gray70"         "gray71"         "gray72"
## [226] "gray73"         "gray74"         "gray75"
## [229] "gray76"         "gray77"         "gray78"
## [232] "gray79"         "gray80"         "gray81"
## [235] "gray82"         "gray83"         "gray84"
## [238] "gray85"         "gray86"         "gray87"
## [241] "gray88"         "gray89"         "gray90"
## [244] "gray91"         "gray92"         "gray93"
## [247] "gray94"         "gray95"         "gray96"
## [250] "gray97"         "gray98"         "gray99"
## [253] "gray100"        "green"          "green1"
## [256] "green2"          "green3"         "green4"
## [259] "greenyellow"     "grey"           "grey0"
## [262] "grey1"           "grey2"          "grey3"
## [265] "grey4"           "grey5"          "grey6"
## [268] "grey7"           "grey8"          "grey9"
## [271] "grey10"          "grey11"         "grey12"
## [274] "grey13"          "grey14"         "grey15"
## [277] "grey16"          "grey17"         "grey18"
## [280] "grey19"          "grey20"         "grey21"
## [283] "grey22"          "grey23"         "grey24"
## [286] "grey25"          "grey26"         "grey27"
## [289] "grey28"          "grey29"         "grey30"
## [292] "grey31"          "grey32"         "grey33"
## [295] "grey34"          "grey35"         "grey36"
## [298] "grey37"          "grey38"         "grey39"
## [301] "grey40"          "grey41"         "grey42"
## [304] "grey43"          "grey44"         "grey45"
## [307] "grey46"          "grey47"         "grey48"
## [310] "grey49"          "grey50"         "grey51"
## [313] "grey52"          "grey53"         "grey54"
## [316] "grey55"          "grey56"         "grey57"
## [319] "grey58"          "grey59"         "grey60"
```

```
## [322] "grey61"           "grey62"           "grey63"
## [325] "grey64"           "grey65"           "grey66"
## [328] "grey67"           "grey68"           "grey69"
## [331] "grey70"           "grey71"           "grey72"
## [334] "grey73"           "grey74"           "grey75"
## [337] "grey76"           "grey77"           "grey78"
## [340] "grey79"           "grey80"           "grey81"
## [343] "grey82"           "grey83"           "grey84"
## [346] "grey85"           "grey86"           "grey87"
## [349] "grey88"           "grey89"           "grey90"
## [352] "grey91"           "grey92"           "grey93"
## [355] "grey94"           "grey95"           "grey96"
## [358] "grey97"           "grey98"           "grey99"
## [361] "grey100"          "honeydew"         "honeydew1"
## [364] "honeydew2"         "honeydew3"         "honeydew4"
## [367] "hotpink"          "hotpink1"         "hotpink2"
## [370] "hotpink3"         "hotpink4"         "indianred"
## [373] "indianred1"       "indianred2"       "indianred3"
## [376] "indianred4"       "ivory"            "ivory1"
## [379] "ivory2"           "ivory3"           "ivory4"
## [382] "khaki"            "khaki1"          "khaki2"
## [385] "khaki3"           "khaki4"          "lavender"
## [388] "lavenderblush"    "lavenderblush1"   "lavenderblush2"
## [391] "lavenderblush3"   "lavenderblush4"   "lawngreen"
## [394] "lemonchiffon"     "lemonchiffon1"   "lemonchiffon2"
## [397] "lemonchiffon3"   "lemonchiffon4"   "lightblue"
## [400] "lightblue1"        "lightblue2"        "lightblue3"
## [403] "lightblue4"        "lightcoral"        "lightcyan"
## [406] "lightcyan1"        "lightcyan2"        "lightcyan3"
## [409] "lightcyan4"        "lightgoldenrod"   "lightgoldenrod1"
## [412] "lightgoldenrod2"   "lightgoldenrod3"   "lightgoldenrod4"
## [415] "lightgoldenrodyellow" "lightgray"        "lightgreen"
## [418] "lightgrey"         "lightpink"         "lightpink1"
## [421] "lightpink2"        "lightpink3"        "lightpink4"
## [424] "lightsalmon"       "lightsalmon1"      "lightsalmon2"
## [427] "lightsalmon3"      "lightsalmon4"      "lightseagreen"
## [430] "lightskyblue"       "lightskyblue1"     "lightskyblue2"
## [433] "lightskyblue3"     "lightskyblue4"     "lightslateblue"
## [436] "lightslategray"    "lightslategrey"    "lightsteelblue"
## [439] "lightsteelblue1"    "lightsteelblue2"   "lightsteelblue3"
## [442] "lightsteelblue4"   "lightyellow"       "lightyellow1"
## [445] "lightyellow2"      "lightyellow3"      "lightyellow4"
## [448] "limegreen"         "linen"            "magenta"
## [451] "magenta1"          "magenta2"         "magenta3"
## [454] "magenta4"          "maroon"          "maroon1"
## [457] "maroon2"           "maroon3"          "maroon4"
## [460] "mediumaquamarine"  "mediumblue"       "mediumorchid"
## [463] "mediumorchid1"      "mediumorchid2"     "mediumorchid3"
## [466] "mediumorchid4"      "mediumpurple"     "mediumpurple1"
## [469] "mediumpurple2"      "mediumpurple3"     "mediumpurple4"
## [472] "mediumseagreen"     "mediumslateblue"   "mediumspringgreen"
## [475] "mediumturquoise"    "mediumvioletred"  "midnightblue"
## [478] "mintcream"          "mistyrose"        "mistyrose1"
## [481] "mistyrose2"          "mistyrose3"        "mistyrose4"
```

```
## [484] "moccasin"          "navajowhite"           "navajowhite1"
## [487] "navajowhite2"         "navajowhite3"          "navajowhite4"
## [490] "navy"                 "navyblue"              "oldlace"
## [493] "olivedrab"            "olivedrab1"             "olivedrab2"
## [496] "olivedrab3"            "olivedrab4"             "orange"
## [499] "orange1"               "orange2"                "orange3"
## [502] "orange4"               "orangered"              "orangered1"
## [505] "orangered2"            "orangered3"             "orangered4"
## [508] "orchid"                "orchid1"                "orchid2"
## [511] "orchid3"               "orchid4"                "palegoldenrod"
## [514] "palegreen"              "palegreen1"             "palegreen2"
## [517] "palegreen3"             "palegreen4"              "paleturquoise"
## [520] "paleturquoise1"         "paleturquoise2"          "paleturquoise3"
## [523] "paleturquoise4"         "palevioletred"           "palevioletred1"
## [526] "palevioletred2"         "palevioletred3"          "palevioletred4"
## [529] "papayawhip"             "peachpuff"              "peachpuff1"
## [532] "peachpuff2"             "peachpuff3"              "peachpuff4"
## [535] "peru"                  "pink"                   "pink1"
## [538] "pink2"                  "pink3"                   "pink4"
## [541] "plum"                  "plum1"                  "plum2"
## [544] "plum3"                  "plum4"                  "powderblue"
## [547] "purple"                 "purple1"                 "purple2"
## [550] "purple3"                 "purple4"                 "red"
## [553] "red1"                  "red2"                   "red3"
## [556] "red4"                  "rosybrown"              "rosybrown1"
## [559] "rosybrown2"              "rosybrown3"              "rosybrown4"
## [562] "royalblue"              "royalblue1"              "royalblue2"
## [565] "royalblue3"              "royalblue4"              "saddlebrown"
## [568] "salmon"                 "salmon1"                 "salmon2"
## [571] "salmon3"                 "salmon4"                 "sandybrown"
## [574] "seagreen"                "seagreen1"              "seagreen2"
## [577] "seagreen3"              "seagreen4"              "seashell"
## [580] "seashell1"              "seashell2"              "seashell3"
## [583] "seashell4"              "sienna"                 "sienna1"
## [586] "sienna2"                 "sienna3"                 "sienna4"
## [589] "skyblue"                 "skyblue1"                "skyblue2"
## [592] "skyblue3"                 "skyblue4"                "slateblue"
## [595] "slateblue1"              "slateblue2"              "slateblue3"
## [598] "slateblue4"              "slategray"              "slategray1"
## [601] "slategray2"              "slategray3"              "slategray4"
## [604] "slategrey"              "snow"                   "snow1"
## [607] "snow2"                  "snow3"                   "snow4"
## [610] "springgreen"             "springgreen1"            "springgreen2"
## [613] "springgreen3"             "springgreen4"             "steelblue"
## [616] "steelblue1"              "steelblue2"              "steelblue3"
## [619] "steelblue4"              "tan"                     "tan1"
## [622] "tan2"                   "tan3"                   "tan4"
## [625] "thistle"                 "thistle1"                "thistle2"
## [628] "thistle3"                 "thistle4"                "tomato"
## [631] "tomato1"                 "tomato2"                 "tomato3"
## [634] "tomato4"                 "turquoise"               "turquoise1"
## [637] "turquoise2"              "turquoise3"              "turquoise4"
## [640] "violet"                  "violetred"               "violetred1"
## [643] "violetred2"              "violetred3"              "violetred4"
```

```
## [646] "wheat"          "wheat1"         "wheat2"  
## [649] "wheat3"          "wheat4"          "whitesmoke"  
## [652] "yellow"           "yellow1"         "yellow2"  
## [655] "yellow3"          "yellow4"         "yellowgreen"
```

Distribution of Total Drawing paper Sale

